



The Hybrid Vehicle and Alternative Fuel Report

May 15, 2015

The fine print: This report is a summary of articles appearing in popular, business, and technical media referring to the impact of fuel costs and fuel efficiency on vehicle technology, development, and markets. At the end of the report is a list of all articles summarized, with hyperlinks to internet sources where available. Some articles may require free registration or paid subscriptions to access. *The Hybrid Vehicle and Alternative Fuel Report* (ISSN: 1946-1011) is compiled, written, and edited by Thomas L. R. Smith, Ph. D., Economic Analysis Branch of the Budget and Financial Analysis Division, Washington State Department of Transportation. Contact *The Hybrid Vehicle and Alternative Fuel Report's* editor at smithtm@wsdot.wa.gov or (360) 705-7941. Contributions of news items, original articles, positive comments about *The Report*, and cookies are welcome. Please send cookies. And not the computer kind.

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NATIONAL HYBRID, ELECTRIC, AND PLUG-IN HYBRID VEHICLE SALES

The Chevrolet Spark EV had record sales in April, selling 920 cars; *Inside EVs* (Loveday, May 1, 2015) revealed. The Spark has never been a big seller, with its previous monthly high of 182 cars in May of last year, but this time it outsold Chevy's Volt by 15 cars. *Inside EVs* credits a price cut and great lease deal, however, an additional factor is that the supply of Voltage is drying up since Chevrolet has shut down Volt assembly, gearing up for the production of the next generation Volt.

For the rest of the hybrid, plug-in, and electric market, we turn to *HybridCars* (Cobb, May 2, 2015) for the sales numbers. Over 32,370 hybrid cars were sold in April. Toyota, as usual, sold 67.35% of the hybrids, with the Prius Liftback and Prius C leading the pack, followed by the Camry. The larger Prius V was down in fifth place with the Camry hybrid and Hyundai Sonata hybrid filling out the top 5. The three Prii sold 14,807 cars, which was down from both last year and last month. Of the top five hybrids, only the Sonata increased over last month. Overall, hybrids took 2.24% of the new car market.

HybridCars (Cobb) says that 2,960 plug-in hybrids were sold. That was 0.2% of the entire market. The Volt led the pack and had a 42% increase over last month, even though it was down by the same percentage from April last year. The Volt accounted for 30.55% of all plug-in hybrids sold. It was followed by Ford's Fusion Energi and C-Max Energi. Combined, the Fords account for 42.67% of the plug-in hybrid market.

Even though fully electric vehicles account for a scant 0.42% of the new car market, *HybridCars* is enthusiastic about how sales are doing. Most of the good news has to do with the addition of new models available for sale (in California, see discussion

below under **ELECTRIC VEHICLES**) and the amazingly high (for electric cars) sales of the Spark (see above). The Tesla was the leader of electric sales. With 1,900 sold, Tesla accounted for 31.47% of electric car sales. The Leaf's 1,550 cars sold made up a little over a quarter of the electric car market. The Spark, in fourth place, sold 920 vehicles, which was 500% increase over last March and 850% increase over April a year ago. But use caution about these percentage increases: a small number multiplied by a big percent is still a small number.

We do not get a breakdown of sales by State, but with the demise of Georgia's electric car tax break, which we reported in the last issue of *The Report*, it will be interesting to see if electric car sales jump in May and June before the tax benefit expires on July 1. On the other hand, Georgia's \$200 annual electric car fee, the highest in the Nation, may discourage sales. We will keep you posted.

In discussing sales rates, there is always the temptation to look at gas prices as the "cause" of either upticks or downticks in sales. *Green Car Reports* (Edelstein, May 7, 2015) says use caution, and reminds us that correlation does not equal causation. *Green Car Reports* first points out that the current downward trend in sales actually predates the fall of gas prices. It argues that the decline has more to do with the life cycle of the dominant models. The Prius, due for a major upgrade at the end of the year, suffers from the fate of any car model that has been out for four or five years—It is uninteresting to consumers and a hard sell. The same is true for the Nissan Leaf, on the electric side and the Volt in the plug-in category. These markets may well see growth when the revised models are introduced and the automotive marketing folks do their Mad Man Magic. *Green Car Reports* also cautions lumping hybrids and electrics in the same numbers when discussing them. The size of the hybrid market dwarfs any change in the electric market.

HYBRIDS

Toyota will stop production of the Prius Plug-in in June while it re-develops the car, *PluginCars* (Berman, May 1, 2015) plugged. Toyota is working on a new version of the Plug-in Prius, but the company is not saying when the new version will be available, but speculation is that it will be late 2016.¹ Details about the new vehicle is scant, but the company does say that current owners want more all-electric mileage. Toyota is also in development of a "fourth-generation" Prius that is supposed to be out some time at the end of this year.

In a paper presented to the Society of Automotive Engineers (SAE), General Motors engineers say that the Volt produces less pollution than any other plug-in hybrid, according to *Clean Technica* (Shahan, May 2, 2015). This is primarily because the Volt's battery is 2 to 4 times larger than the other plug-ins. The Volt spends much more time in

¹ After I buy my next car.

all-electric mode than the others. The new Volt will do even better. The study is available at the [SAE](#) website, but you have to pay \$25 to get it.

Speaking of the new Volt, [The Washington Post](#) (Associated Press, May 3, 2015) reports that it will cost \$1,200 less than the current edition. Lower lithium battery costs receive the credit for much of the lower cost. Starting at \$33,995, the new Volt will get up to 50 miles on batteries, alone, 12 miles better than the current Volt.²

Fort Gordon, the home of the US Army Signal Corps, outside Augusta, Georgia, has reduced its environmental foot print by increasing its fleet of hybrids, electric, and ethanol-fueled vehicles, [The Augusta Chronicle](#) (May 3, 2015) chronicled. The Army post reduced petroleum fuel use by 7% over three years, exceeding the federal executive order requiring a 2% reduction each year. Fort Gordon has 14 hybrids and 9 low-speed electric vehicles.

German carmaker Audi is entering the electric car market, but its focus will be the plug-in hybrid market, [Motrolix](#) (McEachern, May 4, 2015) muses. Audi recently introduced an electric car and plans to go head-to-head with Tesla in a 2018 offering, but Audi believes that hybrids will dominate the market for the next 10 to 15 years until adequate charging infrastructure is built.

The Dutch government is reducing its tax incentives for drivers of company-owned plug-in hybrids, [Automotive News Europe](#) (Gibbs, May 10, 2015) says. Dutch tax payers pay a tax of 25% per year when provided a company car (presumably on the value of the car, the article is not clear), but plug-in hybrid owners pay 7 or 14% depending on the emissions level of the car. Next year, the tax rates will jump to 14 and 21%.

Arizona's HOV lanes are all full up with plug-in hybrids and other energy-efficient vehicles, so it has suspended its special license plate program, radio station [KJZZ](#) (Associated Press, May 12, 2015) radiates. Arizona's Department of Transportation was authorized to issue 10,000 special plates, which allow the vehicles in HOV lanes. The Department says it has now reached that number and will not distribute anymore plates for the nonce. The plates are still valid and owners can transfer the plates from one qualifying vehicle to another. When car owners move out of state or trade a vehicle for one that isn't eligible for the plate, more plates will become available and the program will resume.

ELECTRIC VEHICLES

It won't come as a surprise to readers of this *Report* that electric cars are pretty popular in Washington State. Seattle and the State are right at the top of the list of electric car sales and registrations. The problem is, that even with the popularity and sales,

² Did you see what we did there? Current--Volt?

prospective electric car buyers in Washington don't have a lot of choices. There are only five fully-electric models available. Cars like the Chevrolet Spark, Volkswagen e-Golf, Honda Fit EV, and Fiat 500e are not available. *The Seattle Times* (Voelk, April 26, 2015) explains why. Several years ago, when Washington State adopted California auto-emission standards, Washington did not adopt the part that required car dealers to sell a percentage of zero-emission vehicles. Therefore, there is little incentive for car companies to offer a wider range of electric vehicles to Washington buyers. You could drive to Oregon, which adopted the zero-emission, standards, but you will still have to pay the Washington Use Tax when you register your vehicle in Washington. You could also have difficulty finding a dealer to service your car in Washington, since they aren't sold here. Not that we are endorsing the car, but the BMW i3 is available in Washington, and the super-high tech fiber used in the body of the vehicle comes from Moses Lake, Washington.

Avis Tries Harder: Avis Denmark ordered 401 Nissan e-NV200 vans and 60 Leaves (or Foliage) to create the largest fleet of Nissan electric vehicles in Europe, *Fleet News* (April 30, 2015) notes. Avis already has a bunch of Nissan electric vehicles in its fleet, but with the additional order, the fleet now comes to 861 vehicles.

In our last issue, we chronicled the opening of Oregon's final charging station in Brookings on its portion of the West Coast Electric Highway. Shortly thereafter, intrepid Regional Correspondent for the *Northwest News Network* (part of the National Public Radio digital network) Tom Banse³ (May 4, 2015) set out to drive the Oregon sector. Mr. Banse set out from Portland in a rented Nissan Leaf and drove to Brookings along US 101 on the first day, and then crossed over to Interstate 5 to make the return to Portland on the second day. The trip was mostly made without incident. Mr. Banse encountered two charging stations that were not working, but both were corrected by a phone call to tech support. He estimated that stopping for charges added three hours to each day of the trip. Check out Mr. Banse's story at *Northwest News Network* for the full lowdown.

While jurisdictions are eliminating incentives and even adding fees for electric cars, Normal, Illinois, bucked the trend by extending a tax break on the purchase of electric vehicles, *Pantagraph* (Ford, May 5, 2015) said. The city offers a rebate of as much as \$300 for a \$30,000 to residents of Normal and McLean County. Not all members of the City Council backed the extension.

Norway's government revoked the right for electric car owners to drive in bus lanes and ended the national exemption from tolls and parking rates, *The Local* (May 6, 2015) eloquates. The national government will let local authorities decide if electric cars will get any of these incentives. Most likely, electric car owners will lose these privileges in bigger cities like Oslo, which has had a lot of complaining from public transit operators. Norwegians bought 50,000 electric cars in the last three years; one fifth of the

³ And *Hybrid Report* subscriber.

new cars bought in Norway are electric. Norway accounts for one third of the electric cars sold in Europe. While electric car owners may lose the benefits listed above, sales tax exemptions are still in place until 2017.

Toyota is not a big fan of all-electric vehicles. It discontinued making its only fully electric vehicle, the RAV4 electric some time ago and is concentrating on hybrids and fuel-cell vehicles. Except in China. In order to build any vehicles in China, [Bloomberg](#) (April 22, 2015) says, the Chinese government is requiring automakers to build some electric vehicles. Toyota will introduce the Leahead and Ranz with Chinese partner companies Guangzhou Automobile Group and FAW Group. Toyota will only sell these cars in China.

General Motors has a goal of 500,000 vehicles on the road by 2017 that are powered by some sort of electricity. The car maker also says it won't meet its own goal, according to [The Detroit News](#) (Burden, May 7, 2015). Even though GM includes fully electric, hybrids, and any other technology it uses to allow electricity to power a vehicle, the company says it will fall short of its self-imposed goal. The company also says it will continue to work towards the goal. GM has a new version of the Volt hybrid, the Bolt all-electric, and Malibu and Cadillac hybrids coming out in 2016. The article does not say how far short of the goal GM will be, but the company only had 180,834 electric or partially electric vehicles on the road at the end of 2014.

If you own an electric car or if you think you might want to own an electric car and you live in the South Puget Sound, clear your calendar. The 2nd Annual National Drive Electric week is coming up in September and there will be an event at Sunnyside Beach in Steilacoom, Washington on Sunday, September 13 from 1 PM to 3 PM. There is no cost to attend, but you should sign up at the [Drive Electric Week](#) website. As of this writing, a Ford Focus Electric and a Nissan Leaf are signed up. We thank *Hybrid Report* subscriber Dick Muri, one of the event's organizers, for informing us of this event.

It appears that the people who buy electric cars are younger and richer than the people who buy the conventional version of the same car, [USA Today](#) (Woodyard, May 7, 2015) says. The newspaper reports that TrueCar.com studied buyers of cars like the Focus and the Fiat 500, which come in electric and conventional versions. Electric focus buyers were 3 years younger than conventional Focus buyers, and had a household income of close to \$200,000 per year. Conventional Foci were bought by people with an average household income of \$77,000 per year. Similar results were shown for Fiat 500 buyers.

Employees of the Dumfries and Galloway Council in Scotland don't use the electric cars in the Council's fleet as much as they use conventional cars, because of range anxiety, the [BBC](#) (Rutherford, May 11, 2015) blurbs. The employees fear being stranded in the Council's rural domain in the Nissan Leaf autos, so tend to use the older conventional cars more often.

It is difficult to charge a Tesla in China, [Reuters](#) (Spring, May 12, 2015) reports, which is one reason why Tesla sales in China did not meet targets. The difficulty has to do with the China's national charging standards, or lack thereof. Tesla says it plans to be involved in setting those standards and will then modify Teslas built and sold in China to meet the standards.

Naval Base Ventura County, better known as Port Hueneme, California,⁴ received a full-sized all-electric flatbed truck from [Phoenix Motorcars](#), (Piellisch, April 21, 2015) the company announced on its website. The Zeus (for Zero Emissions Utility Shuttle) is a vehicle to grid vehicle, which means that when needed, the vehicle batteries can provide power back to the Naval Base's power grid. The truck will perform duties in the facilities maintenance department for Port Hueneme and Naval Base Ventura County's airfield at nearby Point Mugu, formerly known as Naval Air Station Point Mugu.

ALTERNATIVE FUELS

Grand Junction, Colorado opened a biofuel compressed natural gas fuel station, the city said in a [press release](#) (April 21, 2015). The station uses compressed biomethane. Grand Junction will use the station to fuel its fleet of natural gas vehicles and the County's natural gas bus fleet. The facility is expected to help Grand Junction reduce carbon emissions by 3 million pounds.

If UPS gets any greener, they will have to change the iconic color of their trucks from brown to green. The company just added 64 liquefied natural gas (LNG) long-haul trucks to its Harrisburg, Pennsylvania, fleet, [Transport Topics](#) (Malloy, April 30, 2015) told. UPS has the largest fleet of for-hire trucks in the U. S. and Canada.

The sky is falling: The Texas A&M Transportation Institute released its latest report on alternative fuel vehicle forecasts called [Alternative Fuel Vehicle Forecasts: Final Report](#) (Baker, Cochran, Norboge, Moran, Wagner, & Storey, March 2015). The report forecasts registrations of alternative fuel vehicles in Texas and discusses the implications to that States gas-tax revenue. While the report discusses that impact, easily missed is the point that it is overall increasing fuel-efficiency that is the greater impact. After that, flexible fuel vehicles, those that use ethanol, have more impact. Some alternative fuels are already charged a per gallon tax, just like gasoline and diesel, but here the problem is those vehicles are also more fuel efficient. Finally, the concern about battery electric vehicles is that they pay no tax at all. Regardless, the forecast for these vehicles is fairly small compared to other alternative fuel vehicles. The bottom-line impact to Texas's revenue is that the State may miss out on \$24 million per year in fuel tax revenue in 2015. That could grow to \$200 million per year by 2035. That's less than

⁴ The Editor was stationed at Port Hueneme from 1987-1989 while assigned to Naval Support Force Antarctica.

8% of Texas's total revenue of \$2.5 billion. WSDOT research librarian Michel Wendt provided us with this study.

“It’s going to be a bright, bright, sunshiny day:”⁵ Even though trucking fleets have slowed their adoption of natural gas vehicles with the fall of diesel prices, trucking analysts say that natural gas has a “brighter future” (Malloy, [Transport Topics](#), May 4, 2014). While many fleets are scaling back or temporarily halting natural gas expansion plans, others, like UPS (above) are still expanding. Apparently, for every dime drop in the price of diesel, it takes a month of CNG use to repay the differential. Nevertheless, infrastructure is being added. Analysts expect conversion to pick up the pace as diesel fuel prices begin to increase again.

Diesel engine manufacturer Cummins is buying part ownership of Agility Fuel Systems, which makes conversion kits to turn diesel trucks into natural gas trucks, [Fleet Owner](#) (May 5, 2015) says. The two companies will work together in developing better integration of natural gas fuel systems and the engines and they will integrate their sales and service systems.

Chevrolet’s 2016 Silverado will come in bi-fuel version, [Transport Topics](#) (May 8, 2015) tells. The Silverado 3500 HD will have a 24.5 gallon CNG tank and 23.5 gallon gasoline tank. The bi-fuel pickup, intended for fleet and commercial use, will be available at the end of this year.

Street cart vendors in New York City will be able to trade their propane-fueled mobile-restaurants for new carts powered by solar panels and natural gas generators, the [New York Daily News](#) (Durkin, May 11, 2015) delivers. New York’s new carts will generate 60% less greenhouse gas and 95% smog-producing material than the current food carts. They are also safer for the vendors. The city will provide the first 100 carts to disabled veterans, and then the remainder, 400, will go to the first vendors to sign up. The carts are free for the vendors and made available through a joint deal between the city and a group called MOVE.

In the human-powered, alternative fuel vehicle department, we find that The [League of American Bicyclists](#) (or the Bike League) has, once again, named Washington State as the Number One bicycle friendly state. Washington has led the nation in bike friendliness for eight years. The State scored high in Education and Encouragement, Legislation and Enforcement, and Policies and Programs. The Bike League’s [report card](#) for the State does warn against complacency as the gap between Washington and the number two State, Minnesota, is shrinking. Oregon, which was in fifth place last year, dropped to sixth place.

⁵ Johnny Nash, “I Can See Clearly Now,” Dovanmusic, 1972.

COMING TO A LOCATION NEAR YOU: The latest news on new charging stations which may or may not be somewhere close to you.

United States: There will not be charging stations coming to Wheaton, Illinois, near Chicago, anytime soon, the *Chicago Tribune* (Goldsborough, April 29, 2015) tries. The city's Environmental Improvement Commission asked the City Council for the money to install two chargers, but the Council said with only 22 electric cars in the city, the chargers were not justified. The city manager also said the city should not endorse one type of fuel over another.

Roswell, Georgia, just north of Atlanta, opened four new chargers around the city, *Neighbor Newspapers* (Swift, April 29, 2015) notes. The city received \$16,000 from the Georgia Environmental Finance Authority. It will cost \$1 an hour for the first four hours of charging. After that the rate jumps to \$20 per hour.

The Shore Hotel in Santa Monica, California, has opened a new fast charging station, but with a twist, the *Santa Monica Mirror* (Eden, April 24, 2015) reflects. The hotel also installed an energy storage system that allows the hotel to smooth out its power usage. This is important for the hotel to manage costs. It appears that when a car plugs into a charge, the electricity usage spike adds fees to the hotel's power bill. The storage system reduces the spike. This may be the first hotel in the United States to adopt such a system.

Western Illinois University in Macomb, which, presumably, is in the western part of Illinois, opened a charging station in Q Lot near the Spencer Student Recreation Center, *The McDonough County Voice* (Steelman, April 30, 2015) voiced. The unit was mostly paid for by an Illinois Department of Commerce and Economic Opportunity grant.

Guests of the Aerie Bed & Breakfast in New Bern, North Carolina,⁶ have free charging stations to charge their Teslas from, the *New Bern Sun Journal* (Hall, April 30, 2015) journaled. People who are not staying at the B&B will pay a \$5 fee for charging.

The Premium Outlets near Hagerstown, Maryland, opened a charging station, the *Hagerstown Herald-Mail* (Calhoun, May 1, 2015) sent. The NRG eVgo Freedom Station is a fast charger. There is also a level 2 charger at the location. Tesla has a charging station nearby.

Montgomery County, Maryland, is developing a charging network that will see stations in 11 public parking garages, *The Gazette* (Shay, May 5, 2015) gathers. The county's Transportation Department installed the first three chargers in Bethesda. The

⁶ The Editor's home state from 1955 to 1961.

County will monitor usage and expand the network as needed. Drivers will pay 13 cents per kilowatt hour.

In Philadelphia, the next charging station could come to the curb in front of your house, *The Philadelphia Inquirer* (Maykuth, May 5, 2015) explains. Electric car owners can ask the Philadelphia Parking Authority (PPA) for permission to install a charger and, if the PPA agrees, the spot will be marked for electric vehicles only. Electric vehicles also have to have permits to park in electric vehicle spaces, but just because the spot is in front of your house does not mean you get exclusive use of the spot. The homeowner requesting the charger has to pay a \$50 application fee and installation fee of \$250 to \$500. There is a higher fee if a parking meter is removed. Finally, the owner must pay an annual fee of \$75 to \$150, depending on where in Philly the charger is located. And there is no guarantee that someone else with an electric vehicle permit won't park there.

More electric charging stations could start showing up right here in Washington State now that Governor Inslee has signed *Substitute House Bill 1853*. The Governor signed the bill at a ceremony at the Legislative Building in Olympia on May 11, 2015⁷. The bill, co-sponsored by *Hybrid Report* subscriber Dick Muri⁸, is intended to encourage utility companies to invest in electric vehicle infrastructure. The bill requires the Washington Utilities and Transportation Commission to consider policies that improve access to charging equipment and promotes competition. It also allows electric companies to receive a return on investment, but caps the costs to utility ratepayers. Utility companies have to agree to full regulation to get the benefits. The bill passed the Legislature with substantial bi-partisan majorities in both Houses.



Governor Jay Inslee (seated) signs SHB 1853 with Representatives Dick Muri (left) Steve Tharinger (center) and Chad Magendanz (right). Photo © 2015 Barney Burke

Around the World: Saugeen Shores, a town in Ontario, Canada, will install two chargers by July 1, the *Shoreline Beacon* (Learment, April 30, 2015) beckons. The town will put one charger in the Port Elgin area and the other in the Southampton area. Bruce Power, the power company for the area, will provide the chargers.

The Vulcan Business Development Society (VBDS), in Vulcan, Alberta, Canada, received permission to install two fast chargers, the *Vulcan Advocate* (May 2, 2015)

⁷ And *The Hybrid Report* was there.

⁸ And State Representative for the 28th Legislative District.

argued. One of the chargers is a Tesla-only charger. Sun Country Highways is providing the chargers to VBDS.

The Maids Head Hotel in Norwich, a city in England's Norfolk County, installed a fast charger that can accommodate three cars, the *Eastern Daily Press* (Pullinger, May 9, 2015) pressed. The charger is free to guests of the inn and staff.

Glasgow Square in downtown New Glasgow, Canada, has a new Sun Country Highway charging station, *New Glasgow News* (May 12, 2015) gloats. The town, in Nova Scotia, will let drivers charge for free for an undetermined time.

OTHER TECHNOLOGY

The least expensive way to reduce idling in commercial long-haul trucks is through truck stop electrification, *Fleet Equipment* (Morgan, May 4, 2015) quipped. The US Department of Energy recently completed its Shorepower Truck Electrification Project (STEP) which provides electric power at 62 truck stops in 30 states. Truckers can hook up to electricity at these truck stops so that they don't have to idle or run generators to run their air-conditioning and other amenities while taking breaks. It costs \$4.00 per hour to idle the engine, \$1.49 per hour to run an auxiliary power unit, but only \$1.08 per hour to use Shorepower. This article was provided by Hybrid Report subscriber Joseph D. Tario of the New York State Energy Research and Development Authority.

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The Hybrid Vehicle and Alternative Fuel Report
May 15, 2015

ISSN 1946-1011
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That is all.